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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/723,898	11/25/2003	David H. Mead	IN-5692	1188

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EXAMINER
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KRUER, KEVIN R

ART UNIT	PAPER NUMBER
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1773

DATE MAILED: 02/27/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/723,898

Applicant(s)

MEAD ET AL.

Examiner

Kevin R. Kruer

Art Unit

1773

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on December 9, 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 7, 10, 11, 13-20 and 22-26 is/are pending in the application.
- 4a) Of the above claim(s) 15, 22 and 23 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 7, 10, 11, 13, 14, 16-20 and 24-26 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 12/22/2005.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

## **DETAILED ACTION**

### ***Election/Restrictions***

1. Claims 15, 22, and 23 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected invention, there being no allowable generic or linking claim. Election was made **without** traverse in the reply filed on November 21, 2005.

### ***Claim Rejections - 35 USC § 103***

2. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

3. Claims 7, 10, 11, 13, 16, 17, 19, 20, and 24, are rejected under 35 USC 103(a) as being unpatentable over Ravinovitch et al (US 4,424,292) and further in view of Wheatley et al (US 5,233,465).

Ravinovitch teaches a vinyl polymer composition suitable for outdoor use in the sunlight. The heat buildup in articles made from the composition is lowered without changing the UV protection or the color of the articles by employing in the composition an infrared reflective pigment (abstract). The vinyl polymer is a vinyl chloride (col 2, lines 38+) comprising a plasticizer or a mixture of plasticizers (col 3, lines 54+). Suitable plasticizers include phthalates (col 3, lines 54+). The pigment is used in amounts such as to lower the heating of the article without changing the UV protection or color thereof (col 4, lines 18+). Said teaching is understood to read on the limitations of claims 6, 8, 19, and 20 that "a sufficient amount of the pigment is used such that there is essentially no transmittance of light of near infrared wavelength through a

Art Unit: 1773

coating layer of a desired thickness formed from the plastisol composition. The film may be utilized alone or applied as a capstock to a substrate (col 3, lines 18+). Said structures when used as a vinyl siding are understood to be flexible (see US 4,728,667; col 1, lines 6+).

Ravinovitch does not teach the claimed thickness. However, Wheatley teaches the reflection spectrum of a particular film is primarily dependent on the optical thickness of the individual layers (col 1, lines 26+). Thus, it would have been obvious to one of ordinary skill in the art at the time the invention was made to vary the thickness of the infrared reflective pigment-containing layer taught in Ravinovitch. The motivation for doing so would have been to optimize the reflection spectra of the layer.

Ravinovitch also does not teach that the pigment should be included in a sufficient amount so that "there is essentially no transmittance of light of near infra-red wavelength through the film." However, Ravinovitch does teach the pigment reflects the infrared energy (col 1, lines 64+), which is desirable to lower the heating of the article. The courts have held that it is not inventive to discover the optimum or workable range by routine experimentation when the general conditions of the claimed invention are disclosed in the prior art (See MPEP 2141.05). Thus, it would have been obvious to one of ordinary skill in the art to add sufficient pigment in order to block the desired amount of infrared energy. The motivation for doing so would have been to reduce heating of the article.

Art Unit: 1773

4. Claims 14 and 18 are rejected under 35 USC 103(a) as being unpatentable over Ravinovitch et al (US 4,424,292) in view of Wheatley et al (US 5,233,465), as applied to claims above, and further in view of Sullivan et al (US 6,416,868).

Ravinovitch is relied upon as above, but does not teach that the capstock should be applied to a metal substrate. However, Sullivan teaches an IR reflective coating that reduces IR induced heat buildup (abstract). Said coating is useful on wood, glass, ceramic, metal and plastic substrates (col 6, lines 47+). Thus, it would have been obvious to one of ordinary skill in the art at the time the invention was made to apply the coating taught in Ravinovitch to metal siding known in the art. The motivation for doing so would have been that Sullivan teaches IR induced heat buildup is an issue on metal substrates as well as plastic substrates.

5. Claims 7, 10, 11, 13, 16, 17, 25, and 26 are rejected under 35 U.S.C. 103(a) as being obvious over Stamper et al (US 4,574,103).

Stamper teaches a plastisol grade vinyl chloride polymer containing 50-80pbw plasticizer (col 1, lines 42+). The composition further includes tin oxide and is cast onto a release paper (col 2, lines 21+). A plastisol grade PVC composition containing titanium dioxide is then applied to the first plastisol layer and the resulting laminate is wound onto a take-up roll (col 2, lines 37+). Said layers should each have a thickness of 12-50mils (col 2, line 40). The laminates are understood to be flexible since they can be wound. Said laminates are taught to be applicable to roofs and/or walls (col 3, lines 1+). Said pigments are included in amounts of 2-8pbw (col 1, lines 28+).

The titanium dioxide is known to be IR reflective and is included in amounts to improve weatherability and resistance to sunlight (col 1, lines 28+). Resistance to sunlight is understood to be inclusive of reflecting IR wavelengths. Thus, it would have been obvious to one of ordinary skill in the art at the time the invention was made to optimize the amount of titanium dioxide utilized in the coating taught in Stamper. The motivation for doing so would have been to optimize the laminate's resistance to sunlight. By doing so, the examiner takes the position that said amounts of titanium dioxide are necessarily adjusted to be included in "sufficient amounts so that there is essentially no transmittance of light of near infrared wavelength through the film."

### ***Response to Arguments***

Applicant's arguments filed November 21, 2005 have been fully considered but they are not persuasive.

Applicant argues Ravinovitch does not define or disclose the effective levels to encompass essentially no transmittance of light of near infrared wavelength. The examiner concedes there is no explicit teaching of said limitations, but takes the position such a limitation is rendered obvious by Ravinovitch for the reasons noted above.

With respect to Ravinovitch in view of Wheatley, Applicant argues the method utilized by Wheatley is completely different than the method utilized by Ravinovitch and the present invention. Said arguments are noted but are not persuasive. Wheatley isn't relied upon to teach a method by which light can be reflected. Rather, Wheatley was relied upon to teach that reflection is inherently dependent upon layer thickness. Thus, the rejection is maintained.

Applicant arguments with regards to Sullivan have been considered. Specifically, Applicant argues the rejection based upon said reference is moot in view of failures of the primary reference. Said arguments are not persuasive for the reasons noted above.

***Conclusion***

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kevin R. Kruer whose telephone number is 571-272-1510. The examiner can normally be reached on Monday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Carol Chaney can be reached on 571-272-1284. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

A handwritten signature in black ink, appearing to read "Kevin R. Kruer". The signature is fluid and cursive, with the first and last names being more prominent.

Kevin R. Kruer  
Patent Examiner-Art Unit 1773